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Crewmembers to benefit from headset upgrade

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WRIGHT-PATTERSON AIR FORCE BASE, Ohio — In an effort to provide both clearer communication and more effective hearing protection for aircrews, Active Noise Reduction (ANR) headsets will be available by year's end.

ANR technology, pioneered in the 1970s by the Air Force Research Laboratory in conjunction with the Bose Corporation, employs an electronically emitted "anti-noise" wave that essentially jams the extraneous noise coming into the ear cup. On missions that can last up to 18 hours, reducing strain on the ears also assists in decreasing the overall level of fatigue experienced by the aircrew.

Correspondence from the Air Force Requirements Oversight Council in 2002 called for implementation of ANR technology on all applicable Air Force aircraft. In response, the AWACS System Program Office approached researchers in the Crew Systems Interface Division of the Human Effectiveness Directorate, Warfighter Interface Team, to find the most cost effective and viable option available on the current market.

This crew tests Active Noise Reduction headsets designed by AFRL technologies and Bose Corporation.

Over the course of 10 months, the Human Effectiveness research team gathered in-flight noise measurements, performed objective tests on all headsets in the laboratory, and collected human factors evaluations data while the headsets were used during missions. Ten different assessment parameters were collected on every headset and combined using subject-matter expert importance weights to create an overall score.

The top two headsets not only provided excellent active noise reduction, but also were also highly rated in terms of their usability, fit, comfort, and expected operating costs.

They were subjected to a second head-to-head comparison of their use over a four-week period. At the conclusion of both evaluations, researchers concluded the Bose Aviation Headset X offered a lighter, more comfortable fit and efficient hearing protection. The headset can also support stereo sound, a characteristic that the current headset lacks, which will set the stage for integration of future technologies such as three-dimensional audio capabilities for the operators.

The ANR headset lowered the noise level going into the ear by 12 decibels, according to Lt. Col. Brian Donnelly, Deputy Director, Warfighter Interface Team and former AWACS operator. "It was a radical difference," he said. "Having flown about 1700 hours on the AWACS, listening to that drop in noise level was pretty remarkable…it was important."

In December, officials at the 552nd Air Control Wing at Tinker Air Force Base, Okla., will begin providing the ANR headsets to all assigned AWACS flight and mission crewmembers. @